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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,899	09/14/2006	Yasuhito Inagaki	09792909-6816	1813
26263 7590 09/02/2009 SONNENSCHN NATH & ROSENTHAL LLP P.O. BOX 061080 WACKER DRIVE STATION, WILLIS TOWER CHICAGO, IL 60606-1080				
EXAMINER				
LEE, DORIS L				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,899

Applicant(s)

INAGAKI, YASUHIITO

Examiner

Doris L. Lee

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 19, 20, 30-33, 35-40 and 42-45 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 20, 30-33, 35-40 and 42-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 29, 2009 has been entered.

Claim Objections

2. **Claim 30** is objected to because of the following informalities: there is an "n" at the end of the first line which should be deleted. Appropriate correction is required.
3. **Claim 32 and 39** is objected to because of the following informalities: please insert commas into the molecular weights so that it is easier to read. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 30 and 37** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. There is no support in the specification for the amendment "8.0 mol %". Appropriate correction is required.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 19, 20, 30-33, 35-36, 38-40, and 42-45** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "claim 17", however claim 17 has been cancelled. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim 20 recites the limitation "claim 15", however claim 15 has been cancelled. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim 30 is missing the transitional phrase such as (for example) consisting, consisting essentially of or comprising. Appropriate correction is required.

Claim 30 recites the limitation "the flame retarder includes an aromatic polymer" in the third line of the claim; however there is insufficient antecedent basis for this limitation in the claim. The examiner suggests that "the flame retarder includes an aromatic polymer" be amended to read "a flame retarder which is and aromatic polymer..." Appropriate correction is required.

Claim 31-33 and 35-36 recites the limitation "The flame retarder...". There is insufficient antecedent basis for this limitation in the claim. The examiner suggests that

"The flame retarder..." be amended to read "The resin composition..." Appropriate correction is required.

Claims 38-40 and 42-45 recites the limitation "The flame retardant resin composition...". There is insufficient antecedent basis for this limitation in the claim. The examiner suggests that "The flame retardant resin composition..." be amended to read "The resin composition having flame retardant properties..." Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 30, 33, 37 and 40** are rejected under 35 U.S.C. 102(b) as being anticipated by **Mark (US 3,978,024)**.

Regarding claims 30, 33, 37, 40, Mark teaches a resin composition having flame retardant properties (Abstract) which comprises a polycarbonate (col. 3, lines 50) which is sulfonated in 0.01 to 10 % concentration of the polymer (col. 3, lines 54-56). It is noted that since the polymer can be polycarbonate homopolymer (col. 3, line 33), the monomer units having aromatic skeletons is 100%.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 30-32, 35-39, and 42-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Inagaki et al (US 5,994,423)**.

Regarding claims 30-31 and 37-38, Inagaki teaches a resin composition (col. 2, line 39) comprising an aromatic polymer comprising 5 to 96 mol% styrene (col. 2, line 52). Inagaki teaches that the aromatic polymer has 2 to 95 mol % sulfonic acid or sulfonate groups (col. 2, line 40).

Although Inagaki does not explicitly teach the range of the sulfonate groups, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the amounts which correspond to the claimed limitations because it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Regarding the flame retardancy properties of the resin and the aromatic polymer, it is noted that "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render

the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999).

Regarding claims 32 and 39, Inagaki teaches that the molecular weight of the polymer is greater than 2000 (col. 3, lines 24-26).

Regarding claims 35 and 42, Inagaki teaches that the sulfonating agent is sulfuric anhydride, fuming sulfuric acid or chlorosulfonic acid (col. 4, lines 40-45).

Regarding claims 36 and 44, Inagaki teaches that the aromatic polymer is waste and used-up materials (col. 3, lines 35-45).

Regarding claim 43, Inagaki teaches that the resins, such as polyethylene terephthalate and polycarbonates can be added to the resin (col. 3, lines 50-53) and the amount of these polymers does not exceed 60 wt % (col. 3, lines 55-57).

Although Inagaki does not explicitly teach the amount of the added resin, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the amounts which correspond to the claimed limitations because it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

12. **Claims 30, 33, 37, 40 and 45** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bialous et al (US 4,391,935)** in view of **Mark (US 3,978,024)**.

Regarding claim 30, 33, 37, 40 and 45, Bialous teaches a flame retardant resin composition (Abstract) which comprises a polycarbonate (Abstract) and sulfonate compounds which are added in an amount from 0.5 to 1.0 parts of the total composition (Table). Bialous also teaches that the composition has a fluorinated polyolefin as a drip retarding agent (col. 1, lines 35-40). It is noted that since the polymer is a homopolymer the monomer units having aromatic skeletons is 100%.

However, Bialous fails to teach that the sulfonate compounds are part of the aromatic polymer.

Mark teaches a resin composition having flame retardant properties (Abstract) which comprises a polycarbonate (col. 3, lines 50) which is sulfonated in 0.01 to 10 % concentration of the polymer (col. 3, lines 54-56).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to sulfonate the polycarbonate of Bialous in the amount taught by Mark. One would have been motivated to do so in order to receive the expected benefit of precluding the migration or plating out of the sulfonated material (Mark, col. 3, lines 51). They are combinable because they are concerned with the same field of endeavor, namely polycarbonates with sulfonate compounds.

Response to Arguments

13. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doris L. Lee whose telephone number is (571)270-3872. The examiner can normally be reached on Monday - Thursday 7:30 am to 5 pm and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Doris L Lee/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796